

CLAIMS

- [c1] 1. A method in a switch for controlling access to a network, the method comprising:
- for each node connected to the switch, receiving from a network manager addresses to which the node is authorized to transmit a communication;
 - receiving a communication from a node, the communication having a destination address;
 - determining based on the received addresses whether the node that transmitted the communication is authorized to transmit a communication to the destination address; and
 - when it is determined that the node is not authorized, suppressing the transmitting of the received communication through the network.
- [c2] 2. The method of claim 1 wherein the address is a virtual address.
- [c3] 3. The method of claim 1 wherein the switch has multiple ports, wherein each port is connected to a node, and wherein each port has access to the received addresses to which the connected-to node is authorized to transmit a communication.
- [c4] 4. The method of claim 1 including storing the received addresses in a label table associated with a port of the switch that is connected to the node.
- [c5] 5. The method of claim 1 including notifying the network manager that the node is not authorized to transmit received communications.

- [c6] 6. The method of claim 1 including indicating that the node is no longer authorized to transmit any communication.
- [c7] 7. The method of claim 6 wherein received addresses are stored in association with the node and the indicating includes removing the association of an address with the node.
- [c8] 8. The method of claim 6 wherein the indicating that the node is no longer authorized to transmit to the address occurs in response to an indication from the network manager that the node is no longer authorized to transmit to the address.
- [c9] 9. The method of claim 6 wherein the indicating that the node is no longer authorized to transmit to the address occurs in response to expiration of a timeout period.
- [c10] 10. The method of claim 6 wherein the indicating that the node is no longer authorized to transmit to the address occurs in response to detecting a condition in a physical layer of a link to between the switch and the node.
- [c11] 11. The method of claim 1 wherein an address is received from the network manager during registration of the node.
- [c12] 12. The method of claim 1 including when it is determined that the node is authorized, transmitting the received communication to the destination address.
- [c13] 13. The method of claim 1 wherein the receiving includes receiving a filter parameter that indicates valid data of a communication from the node.
- [c14] 14. The method of claim 13 including when the received communication does not satisfy a filter parameter, discarding the received communication.

- [c15] 15. The method of claim 14 wherein the filter parameter is priority.
- [c16] 16. The method of claim 14 wherein the filter parameter is class of service.
- [c17] 17. A method in a routing device for controlling access to a network, the method comprising:
- receiving a filter for a node, the filter indicating a valid parameter for a communication transmitted by the node through the network;
 - receiving a communication from the node, the communication having a parameter;
 - determining whether the parameter of the received communication is valid based on the received filter; and
 - when it is determined that parameter of the received communication is not valid, suppressing the transmitting of the received communication.
- [c18] 18. The method of claim 17 wherein the parameter is a virtual address and the filter indicates one or more virtual addresses that can be validly used in a communication transmitted by the node.
- [c19] 19. The method of claim 17 wherein the parameter relates to priority of a communication and the filter indicates a priority that can be validly used in a communication transmitted by the node.
- [c20] 20. The method of claim 17 wherein the parameter relates to class of service of a communication and the filter indicates a class of service that can be validly used in a communication transmitted by the node.
- [c21] 21. The method of claim 17 wherein the routing device has multiple ports, wherein each port is connected to a node, and wherein each port has access to a received filter for the connected-to node.

- [c22] 22. The method of claim 17 wherein the received filter is associated with a destination address assigned to the node and wherein the filter is applied to communications transmitted by the node that have that destination address.
- [c23] 23. The method of claim 17 including notifying a network manager when the transmitting of a communication is suppressed.
- [c24] 24. The method of claim 17 wherein the filter is received from a network manager.
- [c25] 25. The method of claim 17 wherein the filter is received from the network manager based on registration of the node.
- [c26] 26. The method of claim 17 wherein the routing device is a switch.
- [c27] 27. The method of claim 17 wherein the routing device is Fibre Channel compatible.
- [c28] 28. The method of claim 17 wherein the routing device is InfiniBand compatible.
- [c29] 29. A routing device for controlling access to a network, comprising:
 - a component having a filter for a node, the filter indicating valid parameters for communications transmitted by the node through the network;
 - a component that receives communications from the node, the communications having parameters;
 - a component that applies the filter to the communications to determining whether the parameters of the received communications are valid;
 - and

a component that discards a received communication when it is determined that a parameter of the received communication is not valid.

- [c30] 30. The routing device of claim 29 wherein a parameter is a virtual address and the filter indicates one or more virtual addresses that can be validly used in a communication transmitted by the node.
- [c31] 31. The routing device of claim 29 wherein a parameter relates to priority of a communication and the filter indicates a priority that can be validly used in a communication transmitted by the node.
- [c32] 32. The routing device of claim 29 wherein a parameter relates to class of service of a communication and the filter indicates a class of service that can be validly used in a communication transmitted by the node.
- [c33] 33. The routing device of claim 29 wherein the routing device has multiple ports connected to nodes and wherein each port has access to a filter for the connected-to node.
- [c34] 34. The routing device of claim 29 wherein the filter is associated with a destination address assigned to the node and wherein the filter is applied to communications transmitted by the node that have that destination address.
- [c35] 35. The routing device of claim 29 including notifying a network manager when a communication is discarded.
- [c36] 36. The routing device of claim 29 wherein the filter is received from a network manager.

- [c37] 37. The routing device of claim 36 wherein the filter is received from the network manager during registration of the node.

- [c38] 38. The routing device of claim 29 including a component that indicates that the node is not allowed to transmit any communications when it is determined that the parameter of a received communication is not valid.

- [c39] 39. The routing device of claim 29 including when it is determined that the parameter of the received communication is not valid, indicating that the node is not allowed to transmit communications to a destination address associated with the received communication.

- [c40] 40. The routing device of claim 29 including a component that transmits a received communication when it is determined that the parameters of the received communication are valid.

- [c41] 41. The routing device of claim 29 including a component that modifies the filter so that the modified filter is applied to subsequent communications received from the node.

- [c42] 42. The routing device of claim 29 wherein the routing device is a switch.

- [c43] 43. The routing device of claim 29 wherein the routing device is Fibre Channel compatible.

- [c44] 44. The routing device of claim 29 wherein the routing device is InfiniBand compatible.

- [c45] 45. A routing device for controlling access to a network, comprising:

means for applying a filter to communications received from a node to
determining whether parameters of the communications are valid;
and

means for discarding a communication when it is determined that a
parameter of the communication is not valid.

[c46] 46. The routing device of claim 45 wherein a parameter is a virtual address and the filter indicates one or more virtual addresses that can be validly used in a communication transmitted by the node.

[c47] 47. The routing device of claim 45 wherein a parameter relates to priority of a communication and the filter indicates a priority that can be validly used in a communication transmitted by the node.

[c48] 48. The routing device of claim 45 wherein a parameter relates to class of service of a communication and the filter indicates a class of service that can be validly used in a communication transmitted by the node.

[c49] 49. The routing device of claim 45 wherein the routing device has multiple ports connected to nodes and wherein each port has access to a filter for the connected-to node.

[c50] 50. The routing device of claim 45 wherein the filter is associated with a destination address assigned to the node and wherein the means for applying the filter applies it to communications transmitted by the node that have that destination address.

[c51] 51. The routing device of claim 45 including a component that transmits a received communication when it is determined that the parameters of the received communication are valid.

- [c52] 52. The routing device of claim 45 wherein the routing device is a switch.

- [c53] 53. The routing device of claim 45 wherein the routing device is Fibre Channel compatible.

- [c54] 54. The routing device of claim 45 wherein the routing device is InfiniBand compatible.

- [c55] 55. The routing device of claim 45 includes means for receiving a filter from a network manager.

- [c56] 56. The routing device of claim 56 wherein the filter is received during registration of the node.